Erratum to

LHCb Collaboration

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Erratum: Measurement of the CKM angle γ using $B^{\pm} \to DK^{\pm}$ with $D \to K^0_S\pi^+\pi^-, K^0_S K^+K^-$ decays

The LHCb collaboration

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The B^+ and B^- labels of the confidence regions in figure 10 of the original paper [1] were erroneously swapped. The corrected figure is shown in figure 10.

References

[1] LHCb collaboration, *Measurement of the CKM angle γ using $B^{\pm} \to DK^{\pm}$ with $D \to K^0_S\pi^+\pi^-$, $K^0_S K^+K^-$ decays*, *JHEP* **08** (2018) 176 [arXiv:1806.01202] [INSPIRE].

[2] LHCb collaboration, *Update of the LHCb combination of the CKM angle γ using $B \to DK$ decays*, LHCb-CONF-2017-004 (2017) [INSPIRE].

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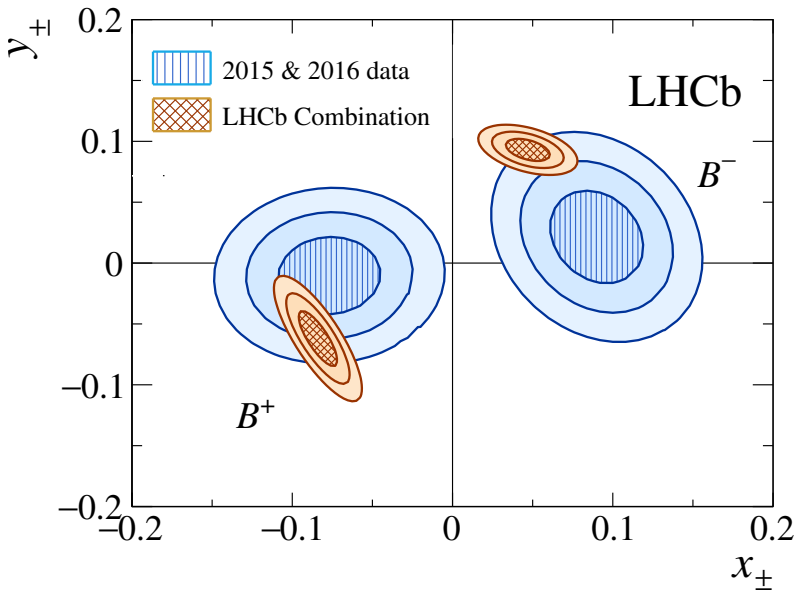

Figure 10. Two-dimensional 68.3 %, 95.5 % and 99.7 % confidence regions for $(x_{\pm}, y_{\pm})$ obtained in this measurement, as well as for the LHCb combination in ref. [2], taking statistical and systematic uncertainties, as well as their correlations, into account.

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S. Ponce[42], A. Popov[39], D. Popov[47,11], S. Poslavskii[39], C. Potterat[2], E. Price[48], J. Prisciandaro[41], C. Prouve[48], V. Pugatch[46], A. Puig Navarro[44], H. Pullen[57], G. Punzi[24,p], W. Qian[63], J. Qin[63], R. Quagliani[8], B. Quintana[5], B. Rachwal[30], J.H. Rademacker[48], M. Rama[24], M. Ramos Pernas[41], M.S. Rangel[2], F. Ratnikov[37,x], G. Raven[28], M. Ravonel Salzgeber[42], M. Reboud[4], F. Redi[43], S. Reichert[10], A.C. dos Reis[1], F. Reiss[8], C. Remon Alepuz[72], Z. Ren[3], V. Renaudin[7], S. Ricciardi[51], S. Richards[48], K. Rinnert[54], P. Robbe[7], A. Robert[8], A.B. Rodrigues[43], E. Rodrigues[59], J.A. Rodriguez Lopez[66], M. Roehrken[42], A. Rogozhnikov[37], S. Roiser[42], A. Rollings[57], V. Romanovskiy[39], A. Romero Vidal[41], M. Rotondo[18], M.S. Rudolph[61], T. Ruf[42], J. Ruiz Vidal[72], J.J. Saborido Silva[41], N. Sagidova[33], B. Saitta[22,f], V. Salustino Guimaraes[62], C. Sanchez Gras[27], C. Sanchez Mayordomo[72], B. Sanmartin Sedes[41], R. Santacesaria[26], C. Santamarina Rios[41], M. Santimaria[18], E. Santovetti[25,j], G. Sarpis[56], A. Sarti[18,k], C. Satriano[26,s], A. Satta[25], M. Saur[63], D. Savrina[34,35], S. Schael[9], M. Schellenberg[10], M. Schiller[53], H. Schindler[42], M. Schmelling[11], T. Schmelzer[10], B. Schmidt[42], O. Schneider[43], A. Schopper[42], H.F. Schreiner[59], M. Schubiger[43], M.H. Schune[7], R. Schwemmer[42], B. Sciascia[18], A. Sciubba[26,k], A. Semennikov[34], E.S. Sepulveda[8], A. Sergi[47,42], N. Serra[44], J. Serrano[6], L. Sestini[23], P. Seyfert[42], M. Shapkin[39], Y. Shcheglov[33,†], T. Shears[54], L. Shekhtman[38,w], V. Shevchenko[69], E. Shmanin[70], B.G. Siddi[16], R. Silva Coutinho[44], L. Silva de Oliveira[2], G. Simi[23,o], S. Simone[14,d], N. Skidmore[12], T. Skwarnicki[61], J.G. Smeaton[49], E. Smith[9], I.T. Smith[52], M. Smith[55], M. Soares[15], l. Soares Lavra[1], M.D. Sokoloff[59], F.J.P. Soler[53], B. Souza De Paula[2], B. Spaan[10], P. Spradlin[53], F. Stagni[42], M. Stahl[12], S. Stahl[42], P. Stefko[43], S. Stefkova[55], O. Steinkamp[44], S. Stemmle[12], O. Stenyakin[39], M. Stepanova[33], H. Stevens[10], S. Stone[61], B. Storaci[44], S. Stracka[24,p], M.E. Stramaglia[43], M. Straticiuc[32], U. Straumann[44], S. Strokov[71], J. Sun[3], L. Sun[64], K. Swientek[30], V. Syropoulos[28], T. Szumlak[30], M. Szymanski[63], S. T'Jampens[4], Z. Tang[3], A. Tayduganov[6], T. Tekampe[10], G. Tellarini[16], F. Teubert[42], E. Thomas[42], J. van Tilburg[27], M.J. Tilley[55], V. Tisserand[5], S. Tolk[42], L. Tomassetti[16,g], D. Tonelli[24], D.Y. Tou[8], R. Tourinho Jadallah Aoude[1], E. Tournefier[4], M. Traill[53], M.T. Tran[43], A. Trisovic[49], A. Tsaregorodtsev[6], A. Tully[49], N. Tuning[27,42], A. Ukleja[31], A. Usachov[7], A. Ustyuzhanin[37], U. Uwer[12], C. Vacca[22,f], A. Vagner[71], V. Vagnoni[15], A. Valassi[42], S. Valat[42], G. Valenti[15], R. Vazquez Gomez[42], P. Vazquez Regueiro[41], S. Vecchi[16], M. van Veghel[27], J.J. Velthuis[48], M. Veltri[17,r], G. Veneziano[57], A. Venkateswaran[61], T.A. Verlage[9], M. Vernet[5], M. Vesterinen[57], J.V. Viana Barbosa[42], D. Vieira[63], M. Vieites Diaz[41], H. Viemann[67], X. Vilasis-Cardona[40,m], A. Vitkovskiy[27], M. Vitti[49], V. Volkov[35], A. Vollhardt[44], B. Voneki[42], A. Vorobyev[33], V. Vorobyev[38,w], J.A. de Vries[27], C. Vázquez Sierra[27], R. Waldi[67], J. Walsh[24], J. Wang[61], M. Wang[3], Y. Wang[65], Z. Wang[44], D.R. Ward[49], H.M. Wark[54], N.K. Watson[47], D. Websdale[55], A. Weiden[44], C. Weisser[58], M. Whitehead[9], J. Wicht[50], G. Wilkinson[57], M. Wilkinson[61], I. Williams[49], M.R.J. Williams[56], M. Williams[58], T. Williams[47], F.F. Wilson[51,42], J. Wimberley[60], M. Winn[7], J. Wishahi[10], W. Wislicki[31], M. Witek[29], G. Wormser[7], S.A. Wotton[49], K. Wyllie[42], D. Xiao[65], Y. Xie[65], A. Xu[3], M. Xu[65], Q. Xu[63], Z. Xu[3], Z. Xu[4], Z. Yang[3], Z. Yang[60], Y. Yao[61], L.E. Yeomans[54], H. Yin[65], J. Yu[65,ab], X. Yuan[61], O. Yushchenko[39], K.A. Zarebski[47], M. Zavertyaev[11,c], D. Zhang[65], L. Zhang[3], W.C. Zhang[3,aa], Y. Zhang[7], A. Zhelezov[12], Y. Zheng[63], X. Zhu[3], V. Zhukov[9,35], J.B. Zonneveld[52], S. Zucchelli[15]

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